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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,571	11/24/2003	Shigeyuki Tofukuji	0038-0419P	1890

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EXAMINER

DAVIS, ROBERT B

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,571	Applicant(s) TOFUKUJI ET AL.	
	Examiner Robert B. Davis	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-16 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/24/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On line 19 of page 3, "claming" should be "clamping".

Appropriate correction is required.

Claim Objections

2. Claims 4 and 6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 4 and 6 merely discuss treatment of the cavity plate without reciting the specific structure that performs the treatment. These claims should be amended to recite the structure associated with such treatment.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-6 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Sticht (5,053,173: figures 1-6; column 2, lines 10-27; column 4, lines 1-23; column 5,

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lines 11-24; column 6, lines 12-17; column 7, lines 40-57; column 8, lines 4-8; column 10, lines 32-43; and column 12, lines 19-64 and column 13, lines 35-43).

Sticht teaches an injection molding machine comprising: a press section (96) having a molding die (26) for clamping and molding a workpiece, a cavity plate (18) having a molding cavity (46), which defines the molded article, means (32) for setting an insert into the molding cavity, conveyors (5, 99) for repeatedly carrying one of a plurality of cavity plates into and out of the press section, and means for positioning the cavity plate onto the molding die (adjustment mechanism 26). The apparatus further teaches an ejector (64, 66) for removing the molded part from the cavity plate (18) after removal from the injection press and a cleaning station (column 12, lines 58-64). The reference also teaches heating means for keeping the mold at a desired temperature (column 10, lines 32-43).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sticht taken together with Miyajima (6,478,562: figures 1-9D and column 3, lines 52-67).

Sticht discloses all claimed features except for the use of a transfer mold, using release film, having an overflow cavity and adjusting for differences in substrate thickness.

Miyajima discloses a transfer mold having a pot (6), plunger (8), release film (9), overflow cavity (15) and adjusting means (34: see figures 9a-9d).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Sticht by modifying the mold to include a transfer mold with a pot and a plunger as disclosed by Miyajima for the purpose of encapsulating semiconductors and utilizing the specific injection mold, in this case a transfer mold which is suited to such a molding operation. It would have been further obvious to use a release film to eliminate or reduce cleaning of the mold between uses as disclosed by Miyajima. It would have been further obvious to use an overflow cavity as disclosed by Miyajima to ensure complete filling of the molding cavity to avoid pockets or exposed electrical devices in the molded article. It would have been further obvious to supply the mold with adjusting means to accommodate different thicknesses of substrates as disclosed by Miyajima for the purpose of avoiding damage to the substrate or the mold

during pressurization of the molding cavity to allow injection of the material into the mold.

8. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sticht taken together with Furuta et al (6,908,293: figures 4A-8).

Sticht discloses all claimed features except for a degating station to remove the gate and runner portions ancillary to the mold injection step.

Furuta et al disclose a transfer molding apparatus having a plurality of movable cavity plates (105) which are fed to a transfer press (figure 4a), wherein the post molding steps that the cavity plates (105) are fed after removal from the transfer press include a degating station as illustrated in figure 8 (4).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the apparatus of Sticht by providing a degating station as disclosed by Furuta et al for the purpose of removing the gate and associated runners from the cavity plate away from the molding press to decrease the time required by the transfer molding step and increasing the output of the apparatus as a whole.

Allowable Subject Matter

9. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art teaches or suggests the apparatus of claim 1, wherein the cavity plate is a metal belt which is circulated or reciprocally moved on a clamping face

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of the molding die. The closest prior art (Slepcevic 4,442,056) discloses a metal gate plate, but does not disclose or suggest modification of a molding cavity such that the cavity plate is a metal plate. None of the prior art of record teaches or suggests the apparatus of claim 1, wherein the cavity plate is wound on a couple of rollers and the cavity plate is separated away from a clamping face of the molding die and conveyed between the rollers with a prescribe pitch after the work is molded.

Conclusion


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining references illustrate the state of the molding art with movable mold elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B. Davis whose telephone number is 571-272-1129. The examiner can normally be reached on Monday-Friday 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert B. Davis
Primary Examiner
Art Unit 1722

12/12/05